CLAIMS

What is claimed is:

1. The nucleotide sequence set forth in SEQ ID NO:1.

2. The nucleotide sequence of Claim 1, wherein said nucleotide sequence further comprises 5' and 3' flanking regions.

3. The nucleotide sequence of Claim 1, wherein said nucleotide sequence further comprises intervening regions.

4. A polynucleotide sequence which is complementary to SEQ ID NO:1 or variants thereof.

5. A vector comprising the nucleotide sequence of Claim 1.

6. A host cell containing the vector of Claim 5.

Sub B1 7. A purified Chk1 protein encoded by the nucleotide sequence of Claim 1.

Sub C2 8. A purified protein comprising the amino acid sequence set forth in SEQ ID NO:3.

Sub B2 9. A fusion protein comprising a portion of the Chk1 protein of Claim 7, and a non-Chk1 protein sequence.

Sub C3 10. The fusion protein of Claim 9, wherein said Chk1 protein comprises at least a portion of SEQ ID NO:3.

11. The fusion protein of Claim 9, wherein said non-Chk1 protein sequence comprises an affinity tag.

12. The fusion protein of Claim 11, wherein said affinity tag comprises a histidine tract.

13. The nucleotide sequence set forth in SEQ ID NO:2.

14. The nucleotide sequence of Claim 13, wherein said nucleotide sequence further comprises 5' and 3' flanking regions.

15. The nucleotide sequence of Claim 13, wherein said nucleotide sequence further comprises intervening regions.

16. A polynucleotide sequence which is complementary to SEQ ID NO:2 or variants thereof.

17. A vector comprising the nucleotide sequence of Claim 13.

18. A host cell containing the vector of Claim 17.

19. A purified Chk1 protein encoded by the nucleotide sequence of Claim 12.

20. A purified protein comprising the amino acid sequence set forth in SEQ ID NO:4.

21. A fusion protein comprising a portion of the Chk1 protein of Claim 19, and a non-Chk1 protein sequence.

22. The fusion protein of Claim 21, wherein said Chk1 protein comprises at least a portion of SEQ ID NO:4.

23. The fusion protein of Claim 21, wherein said non-Chk1 protein sequence comprises an affinity tag.

Sub B5

24. The fusion protein of Claim 23, wherein said affinity tag comprises a histidine tract.

25. A method for detecting Chk1 protein comprising:

a) providing in any order:

i) a sample suspected of containing the Chk1 protein;

ii) an antibody capable of specifically binding to a Chk1 protein;

b) mixing said sample and said antibody under conditions wherein said antibody can bind to said Chk1 protein; and

c) detecting said binding.

26. The method of Claim 25, wherein said sample comprises one or more cells suspected of containing Chk1 protein.

27. The method of Claim 26, wherein said cells contain an abnormal Chk1 protein.

28. The cells of Claim 25, wherein said cells are selected from the group consisting of human cells and murine cells.

29. An antibody, wherein said antibody is capable of specifically binding to at least one antigenic determinant on the proteins encoded by an amino acid sequence selected from the group comprising SEQ ID NOS:3, 4, 7, 8, 9, and 10.

30. The antibody of Claim 27, wherein said antibody is a polyclonal antibody.

31. The antibody of Claim 27, wherein said antibody is a monoclonal antibody.

32. A method for producing anti-Chk1 antibodies comprising:

a) providing in any order:

i) an antigen comprising at least a portion of Chk1 protein; and

ii) an animal having immunocompetent cells; and

b) exposing said animal to said Chk1 protein under conditions such that said immunocompetent cells produce anti-Chk1 antibodies.

33. The method of Claim 32, further comprising the step of harvesting said antibodies.

34. The method of Claim 32, wherein said antigen comprising at least a portion of Chk1 protein is a fusion protein.

35. The method of Claim 32, further comprising the step of fusing said immunocompetent cells with an immortal cell line under conditions such that an hybridoma is produced.

36. A method for detection of polynucleotides encoding human Chk1 in a biological sample comprising the steps of:

a) hybridizing a nucleotide comprising at least a portion of the nucleotide of SEQ ID NO:1 to nucleic acid material of a biological sample, thereby forming a hybridization complex; and

b) detecting said hybridization complex, wherein the presence of said complex correlates with the presence of a polynucleotide encoding human Chk1 in said biological sample.

37. The method of Claim 36, wherein before hybridization, the nucleic acid material of the biological sample is amplified by the polymerase chain reaction.

38. The method of Claim 37, wherein said polymerase chain reaction is conducted using primers selected from the group consisting of SEQ ID NOS:5, 6, 12, 13, 14, and 15.